

### ABSTRACT

A snowmobile is described having a frame and an engine disposed on the frame. A drive track is disposed below the frame and connected operatively to the engine for propulsion of the snowmobile. At least one ski is disposed on the frame. A seat is disposed rearwardly of the engine, suitable for a rider with a center of gravity, and a steering device is disposed above the engine and forward of the seat, the steering device being operatively connected to the at least one ski for steering the snowmobile. The snowmobile has a center of gravity positioned such that a distance between a vertical line passing through the center of gravity of the snowmobile and a vertical line passing through the center of gravity of the rider is within a predetermined range. Also, the distance between the steering position of the snowmobile and the seat position of the rider falls within a predetermined range. The rider is positioned on the snowmobile such that lines passing through the steering position, the seat position, and the footrest position form a triangle with angles  $\alpha$ ,  $\beta$ , and  $\gamma$  that have a specific relationship to one another. In addition, the steering position is disposed forward of the forward-most drive axle of the drive track. The footrests are positioned below the seat at a declining angle  $\Delta$  to the horizontal. The axis of the steering column of the snowmobile forms an angle  $\epsilon$  with vertical that falls within a predetermined range. A line passing through the steering position and the seat position forms an angle  $\phi$  with the horizontal that falls within a predetermined range. A line passing through the center of gravity of the vehicle and the center of gravity of the rider forms an angle  $\theta$  with the horizontal that falls within a specified range. Finally, the position of the rider is such that the head of the rider naturally falls within a laminar air flow region that is defined by the windshield of the snowmobile.